(43) International Publication Date 30 September 2004 (30.09.2004)

PCT

(10) International Publication Number WO 2004/083594 A3

(51) International Patent Classification7: 43/10

E21B 23/00,

(21) International Application Number:

PCT/US2004/008171

(22) International Filing Date: 15 March 2004 (15.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/454,896

14 March 2003 (14.03.2003) US

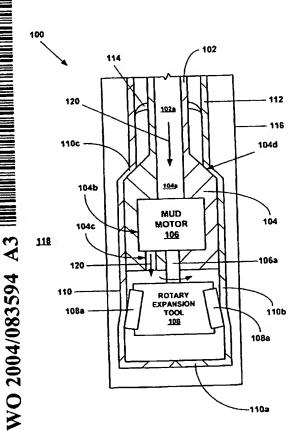
- (71) Applicant (for all designated States except US): ENVENTURE GLOBAL TECHNOLOGY [US/US]; 16200 A Park Row, Houston, TX 77084 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SHUSTER, Mark

[US/US]; 19115 Prospect Ridge Lane, Houston, TX 77094 (US). COSTA, Scott [US/US]; 2011 Willow Point, Kingwood, TX 77330 (US).

- (74) Agent: MATTINGLY, Todd; Haynes and Boone, LLP, 901 Main Street, Suite 3100, Dallas, TX 75202 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: APPARATUS AND METHOD RADIALLY EXPANDING A WELLBORE CASING USING AN EXPANSION MANDREL AND A ROTARY EXPANSION TOOL



(57) Abstract: An apparatus and method for radially expanding a wellbore casing (112) using an expansion mandrel (104) and a rotary expansion tool (108).

BEST AVAILABLE COPY

Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- (88) Date of publication of the international search report: 19 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/08171

			1 C1/0504/06171		
A. CLASSIFICATION OF SUBJECT MATTER					
IPC(7) : E21B 23/00, 43/10					
US CL : 166/380, 382, 207					
According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols)					
U.S. : 166/380, 382, 207, 206					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
E)estronia dat	to have consulted during the international ceases (name	of data bace and when	neacticable search	terms used)	
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)					
				·	
C. DOCL	JMENTS CONSIDERED TO BE RELEVANT				
Category •	Citation of document, with indication, where ap	propriate, of the releva	nt passages	Relevant to claim No.	
х	US 3,785,193 A (KINLEY et al) 15 January 1974 (15/01/1974), Figures 1-3. 2, 4-6 at			2, 4-6 and 8-15	
×	US 2.627,891 A (CLARK) 10 February 1953 (10/02/1953), Figures 1 and 4.			2, 4-6 and 8-15	
A, P.	US 6,543,552 A (METCALFE et al) 08 April 2003 (08/04/2003), Figures 1-7.				
	110 2 010 724 A (DATEMANN 25) - 1074 (25/05/1074) Pi1			. 15	
Α	US 3,818,734 A (BATEMAN) 25 June 1974 (25/06/1974), see Figure 1.				
	US 2003/0024711 A1 (SIMPSON et al) 06 February 2003 (06/02/2003), Figure 2			1-15	
A	US 2003/0024711 A1 (SIMPSON et al) 00 rebruary 2003 (00/02/2003), Figure 2			1-13	
]					
		•			
				j	
	İ				
ł					
1					
1					
Further documents are listed in the continuation of Box C. See patent family annex.					
Special categories of cited documents: T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not in conflict with the application but cited to understand the date and not only the date and n					
'A" documen	at defining the general state of the art which is not considered to be of		heory underlying the inve		
	relevance			-t-tt	
"E" cartier ap	plication or patent published on or after the international filing date	"X" document of considered no	particular relevance; the overlor cannot be conside	claimed invention cannot be red to involve an inventive step	
			ument is taken alone	•	
"L" documen	which may throw doubts on priority claim(s) or which is cited to	"Y" document of	naticular relevance: the	claimed invention cannot be	
specified	the publication date of another citation or other special reason (as	considered to	involve an inventive step	p when the document is	
1	•	combined with one or more other such documents, such combination being obvious to a person skilled in the art			
"O" documen	u referring to an oral disclosure, use, exhibition or other means	being obviou	s to a person skilled in th	e an	
"P" document published prior to the international filing date but later than the "&" document member of the same patent family					
priority date claimed					
Date of the a	ectual completion of the international search	Date of mailing of th	e international sear	ch report	
11.10	005 (11 01 2005)	16 FEE	3 2005		
	005 (11.01.2005)	Authorized officer	2000		
1	ailing address of the ISA/US ail Stop PCT, Attn: ISA/US				
	mmissioner for Patents	Hoang Dang Tolpe for			
P.C	D. Box 1450	Telephone No. 703	308-2168	U	
	Alexandria, Virginia 22313-1450 Telephone No. 703-308-2168/				
i Facsimile No	o. (703) 305-3230	i			

Forn PCT/ISA/210 (second sheet) (January 2004)